

# B224VSS, 2-Way, Ball Valve

## Stainless Steel Body, Ball and Stem



### Application

These threaded valves are designed to provide modulating or two position control of hot or chilled water and saturated steam systems under 50 psi. Typical applications include reheat coils, VAV terminal control, unit ventilators, and air handlers, especially in areas which have minimum profile requirements. Up to 50 psi steam  
 1/2" - 2000 PSIG WOG, Cold Non-Shock  
 Federal Specification: WW-V-35C, Type II  
 Composition: SS  
 Style: 3

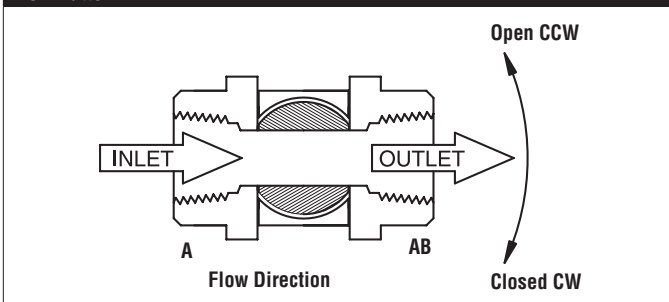
### Suitable Actuators

	Non-Spring	Spring
B224VSS	AMB(X), SY1	AFB(X)

### Technical Data

Service	chilled or hot water, up to 60% glycol, steam
Flow Characteristic	modified equal percentage
Controllable Flow Range	90° rotation, A to AB open CCW, B to AB open CW
Size [mm]	1" [25]
End Fitting	sae npt (female connections)
Body	A351-CF8M 316 Stainless Steel
Body Seal	PTFE
Ball	316 stainless steel
Gland	A276-316
Stem	316 stainless steel
Stem Packing	reinforced PTFE
Stem Bearing	reinforced PTFE
Jam Nut	stainless steel
Seat	reinforced PTFE w/ Durafill
Body Pressure Rating [psi]	1500 psig WOG
Max Inlet Pressure (Steam)	50 psi
Media Temperature Range (Water)	-22°F to 298°F [-30°C to 148°C]
Maximum Differential Pressure (Steam)	50 psi
Max Differential Pressure (Water)	<600 psig
Close-Off Pressure	1000 psi
Maximum Velocity	15 FPS
Cv	43
Weight	1.8 lb [0.8 kg]
Leakage	ANSI Class VI

### Flow Pattern



# AFX24-MFT95-X1

## Modulating, Spring Return, 24 V, 0 to 135 Ω Input



Technical Data	
Power Supply	24 VAC, ±20%, 50/60 Hz, 24 VDC, -10% / +20%
Power Consumption Running	7.5 W
Power Consumption Holding	3 W
Transformer Sizing	10 VA (class 2 power source)
Electrical Connection	18 GA appliance rated cable with 1/2" conduit connector protected NEMA 2 (IP54) 3ft [1m] 10ft [3m] and 16ft [5m]
Overload Protection	electronic throughout 0° to 95° rotation
Operating Range Y	0 to 135 Ω Honeywell Electronic Series 90, 0 to 135 Ω input
Feedback Output U	2 to 10 VDC, 0.5 mA max, VDC variable
Angle of Rotation	95°, adjustable with mechanical end stop, 35° to 95°
Torque motor	Min. 180 in-lbs [20 Nm]
Direction of Rotation (Motor)	reversible with built-in switch
Direction of Rotation (Fail-Safe)	reversible with CW/CCW mounting
Position Indication	visual indicator, 0° to 95° (0° is full spring return position)
Manual Override	5 mm hex crank (3/16" Allen), supplied
Running Time (Motor)	150 sec
Running Time (Fail-Safe)	<20 sec
Override Control	min. position = 0% , mid. Position = 50% , max. position = 100% (Default)
Ambient Humidity	max. 95% RH non-condensing
Ambient Temperature Range	-22°F to 122°F [-30°C to 50°C]
Storage Temperature Range	-40°F to 176°F [-40°C to 80°C]
Housing	NEMA 2, IP54, UL Enclosure Type 2
Housing Material	zinc coated metal and plastic casing
Agency Listings†	cULus acc. to UL60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2004/108/EC
Noise Level (Motor)	<40 dB (A)
Noise Level (Fail-Safe)	<62 dB (A)
Servicing	maintenance free
Quality Standard	ISO 9001
Weight	4.6 lb [2.1 kg]

\*Variable when configured with MFT options.

†Rated Impulse Voltage 800V, Type of action 1.AA, Control Pollution Degree 3

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## Wiring Diagrams

**WARNING! LIVE ELECTRICAL COMPONENTS!**  
 During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. Have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.

Meets cULus requirements without the need of an electrical ground connection.

Provide overload protection and disconnect as required.

Actuators may also be powered by 24 VDC.

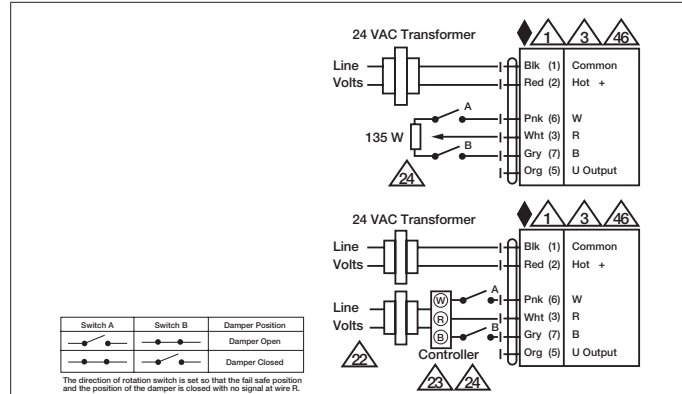
Actuators and controller must have separate transformers.

Consult controller instruction data for more detailed information.

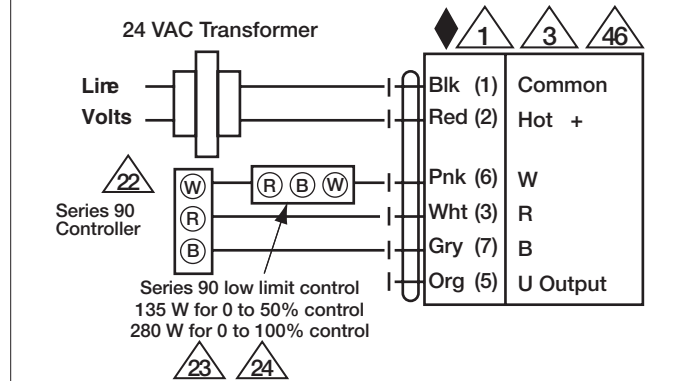
Resistor value depends on the type of controller and the number of actuators. No resistor is used for one actuator. Honeywell® resistor kits may also be used.

To reverse control rotation, use the reversing switch.

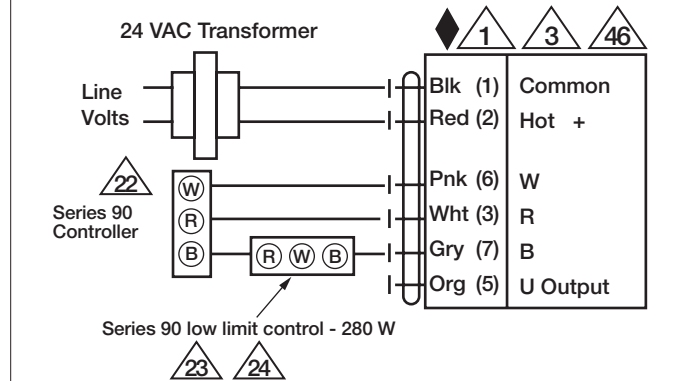
Actuators may be controlled in parallel. Current draw and input impedance must be observed.



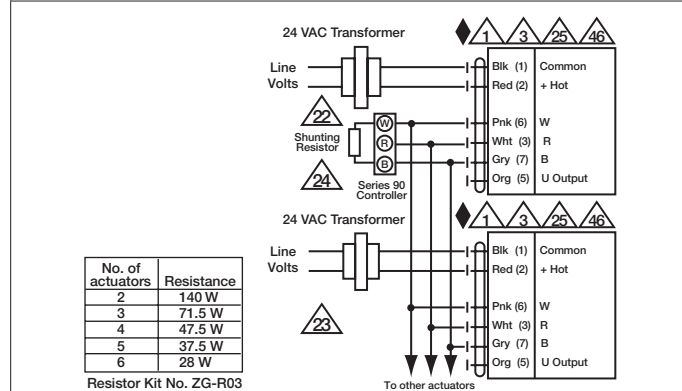
### Typical and Override Control



### Low Limit Control



### High Limit Control



No. of actuators	Resistance
2	140 W
3	71.5 W
4	47.5 W
5	37.5 W
6	28 W

Resistor Kit No. ZG-R03

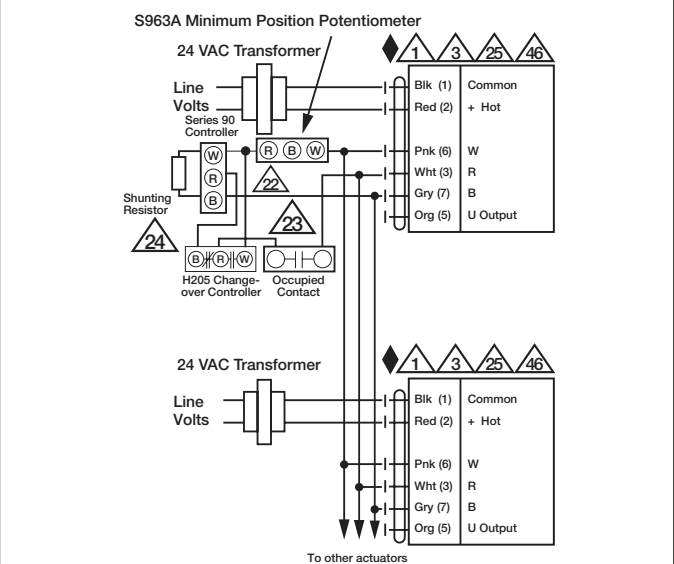
### Multiple Actuators

# AFX24-MFT95-X1

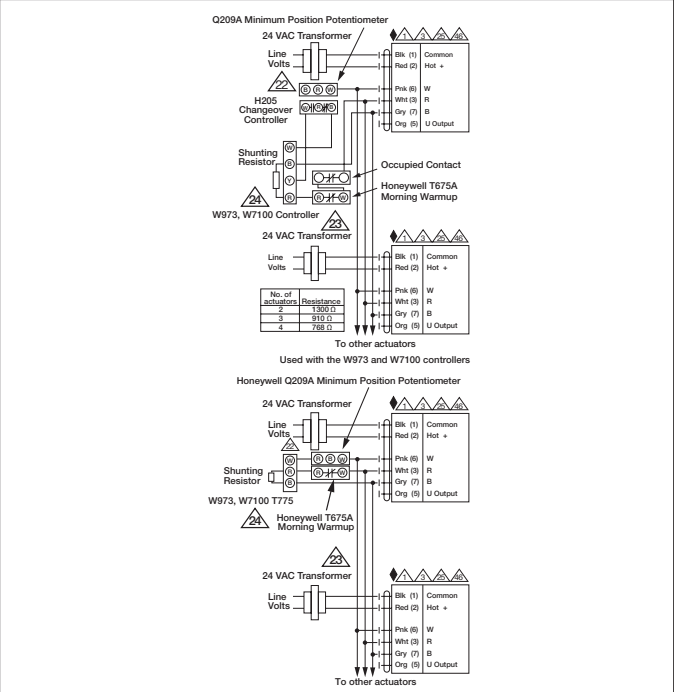
Modulating, Spring Return, 24 V, 0 to 135 Ω Input



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**Multiple Actuators with Minimum Position Potentiometer**



**Multiple Actuators Used with W973, W7100 and T775**